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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,693	06/17/2002	Wolf Bertling	10848-019001	4674

7590 08/09/2005

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EXAMINER	
JUNG, UNSU	
ART UNIT	**PAPER NUMBER**
1641	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/049,693	BERTLING ET AL.	
	Examiner	Art Unit	
	Unsu Jung	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-24* is/are pending in the application.

4a) Of the above claim(s) *20-24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/9/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I (claims 11-19) in the reply filed on July 11, 2005 is acknowledged. The traversal is on the ground(s) that all groups recite a special technical feature of a substrate having a layer with electro-active metal atoms, ions, clusters or complex molecules and further having biopolymers applied. Applicants argue that since all the claims recite a substrate having such features, that a search of claims 1-24 (Groups I-IV) would not present an undue burden on the Examiner. Furthermore, applicants argue that Thielecke et al. (U.S. PG Pub No. US 2004/0209351) is not a prior art. This is not found persuasive because, under PCT Rule 13, a search burden need not be established for lack of unity requirement. In addition to Thielecke et al., Bamdad (WO 98/31839, Published July 23, 1998) teaches a process using a substrate having a layer with electro-active metal atoms, ions, clusters or complex molecules and further having biopolymers applied (p25, lines 11-17). Therefore, a substrate having such features cannot be a special technical feature under PCT Rule 13.2.

The requirement is still deemed proper and is therefore made FINAL.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The use of legal phraseology "said" in line 3 of the Abstract should be avoided.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 17 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The process of claims 17 and 18, wherein a change in amplitude or phase is an electrical property to identify the presence of the anti-counterfeiting mark, is not supported by the original specification. The specification discloses that a change that can be measured is the change in impedance or conductivity in the direct current and/or alternating-current region as a function of a

superimposed alternating-voltage or current frequency. However, the specification fails to specifically disclose measurement of change in amplitude or phase to identify the presence of the anti-counterfeiting mark.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 11-16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bamdad (WO 98/31839, Published July 23, 1998).

Bamdad anticipates instant claims by teaching a process for an identification of a biopolymer (anti-counterfeiting mark) comprising:

Applying a first biopolymer (nucleic acid, p25, lines 9-13) to a surface of a first substrate as a layer with electro-active metal atoms, ions, clusters or complex molecules (a metal surface such as a gold-coated electrode, p24, line 11-12);

Contacting the fist biopolymer with a second biopolymer applied as a layer with electro-active metal atoms, ions, clusters or complex molecules, wherein the second biopolymer has affinity to the first biopolymer, thereby generating a biopolymer-biopolymer complex (hybridized nucleic acid, p25, lines 11-17);

Applying an electrical current to the biopolymer-biopolymer complex (p25, lines 17-18), and;

Measuring an electrical property of the biopolymer-biopolymer complex, thereby identifying the presence of the anti-counterfeiting mark (p26, lines 6-11).

With respect to claim 12, Bamdad teaches a process, wherein the electrical current is a direct current (D.C. circuit, p25, lines 20-21).

With respect to claim 13, Bamdad teaches a process, wherein the electrical current is an alternating current (A.C. circuit, p25, lines 20-21).

With respect to claim 14, Bamdad teaches a process, wherein the electrical property measured is a change in impedance/conductivity (p9, lines 1-4).

With respect to claim 15, Bamdad teaches a process, wherein the electrical property measured is a function of a superimposed alternating-voltage or alternating-current frequency (p29, lines 22-30).

With respect to claim 16, Bamdad teaches a process, wherein the electrical property measured is a change in voltage (p29, lines 22-30).

With respect to claim 18, Bamdad teaches a process, wherein the electrical property measured is a change in phase (p28, lines 21-25).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bamdad (WO 98/31839, Published July 23, 1998) in view of Kell et al. (U.S. Patent No. 4,810,650, Filed Sept. 22, 1987).

Bamdad teaches a process for a process for identification of a biopolymer as discussed above. Bamdad further teaches that the occurrence of binding of biopolymers can be detected by monitoring changes in voltage (p29, lines 22-30). However, Bamdad fails to specifically teach that the electrical property measured to identify a biopolymer-biopolymer complex is a change in amplitude.

It is well known in the art that the voltage can be characterized by frequency and amplitude. Kell et al. teaches means for providing a voltage signal indicative of the instantaneous voltage between voltage electrodes (column 5, lines 47-48). Kell et al. further teaches that a voltage detector measures a signal representative of the amplitude of voltage between two voltage-sensing electrodes (column 6, lines 59-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in the process of Bamdad with voltage amplitude measurements to measure voltage between electrodes as taught by Kell et al. in order to monitor the binding of biopolymers.

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bamdad (WO 98/31839, Published July 23, 1998) in view of Pfab et al. (U.S. Patent No. 5,018,527, Filed July 28, 1988).

Bamdad teaches a process for a process for identification of a biopolymer as discussed above. However, Bamdad fails to teach a process, wherein the electrical property is carried out by a reference electrode and/or counter electrode.

Pfab et al. teaches that a reference electrode forms a constant reference point for the measuring electrode of the sensor for the purpose of measuring a voltage differences between the reference electrode and the measuring electrode.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in the method of Bamdad with the use of reference electrode as a reference point for a measuring electrode as taught by Pfab et al. in order to measure a voltage differences between the reference electrode and the measuring electrode.

Conclusion

12. No claims allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Unsu Jung whose telephone number is 571-272-8506. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Unsu Jung, Ph.D.
Patent Examiner
Art Unit 1641

LONG V. LE
SUPERVISORY PATENT EXAMINER
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08/08/05